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Example process diagrams:

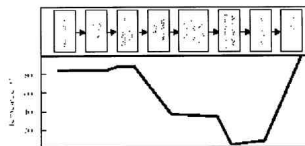
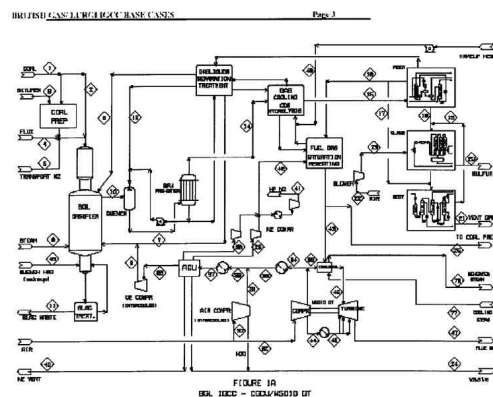


Figure 4.4 Temperature Profile of ARBRE Gasification System



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Comment No. 17 (cont.)

Issue Code: 14

to 2,394 MW in 2003 and 3,478 MW in 2015. Based on this load growth, EKPC will need additional power supply resources of 625 MW in 2003. The need is further shown by EKPC's plans to construct four new CT electric generating units to provide peaking service alongside their three existing peaker CTs at the J.K. Smith Site.

Comment No. 18

Issue Code: 22

Comment noted. Because of DOE's limited role of providing cost-shared funding for the proposed Kentucky Pioneer IGCC Demonstration Project, alternative sites were not considered. KPE selected the existing J.K. Smith Site because the costs would be much higher and the environmental impacts would likely be greater if an undisturbed area was chosen.

Comment No. 19

Issue Code: 12

The project produces primarily vitrified frit which is considered a commercial product, not a waste stream. The frit from gasifiers operating on a 100 percent coal feed has consistently proven to be nonhazardous under RCRA. Since this project will be using a different feed stream, the first batch of frit should be tested to ensure that it meets all TCLP criteria and would therefore be nonhazardous. The waste generated at the proposed facility that would be landfilled in the State of Kentucky would be solid waste. It is difficult to determine whether waste from this project would drive up the cost of landfilling. Landfill cost increases are dependent on a number of factors, not just the waste generated from this proposed facility.

Comment No. 20

Issue Code: 02

All waste streams (air, water, and solid) generated by the project would be in compliance with federal, state, and local guidelines and ordinances. The presence of the facility should have no impact on future business opportunities in Clark County or Kentucky. No burdens to the economic health of the region as a result of this project

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Example flow rate and temperature regime diagram.

TABLE 6													
BIO-RACIAL DIFFERENCES IN THE PREVALENCE OF													
PSYCHIATRIC DISORDERS IN THE U.S. ARMY													
DISORDER	WHITE		BLACK		HISPANIC		ASIAN		PACIFIC ISLANDER		NATIVE AMERICAN		TOTAL
	PREVALENCE	OR	PREVALENCE	OR	PREVALENCE	OR	PREVALENCE	OR	PREVALENCE	OR	PREVALENCE	OR	
ALL DISORDERS	15.0	1.0	18.0	1.2	12.0	0.8	10.0	0.7	11.0	0.7	13.0	0.9	12.0
MAJOR DEPRESSION	10.0	1.0	12.0	1.2	8.0	0.8	7.0	0.7	8.0	0.7	9.0	0.9	9.0
ANXIETY DISORDERS	5.0	1.0	6.0	1.2	4.0	0.8	3.0	0.7	4.0	0.7	5.0	0.9	4.0
POST-TRAUMATIC STRESS DISORDER	3.0	1.0	4.0	1.3	2.0	0.7	1.0	0.6	2.0	0.6	3.0	0.8	2.0
PERSONALITY DISORDERS	2.0	1.0	3.0	1.5	1.0	0.6	0.5	0.5	1.0	0.5	1.5	0.7	1.0
ALCOHOL USE DISORDERS	1.0	1.0	1.5	1.5	0.5	0.5	0.2	0.2	0.5	0.5	0.8	0.8	0.5
DRUG USE DISORDERS	0.5	1.0	0.8	1.6	0.2	0.4	0.1	0.1	0.2	0.2	0.4	0.8	0.2
OTHER DISORDERS	1.5	1.0	2.5	1.7	1.5	1.0	1.5	1.0	2.0	1.0	2.5	1.7	1.5

Significant research is needed to characterize the effluents from a coal fired IGCC facility compromised with low ratios of coal to MSW/RDF. Kentucky will bear the risk of insufficient research.

Please find attached a (very) preliminary bibliography (Appendix A) that suggests both a paucity of peer-reviewed research specific to our case and confounding results.

The titles in that list suggest that nearly all the available literature is on MSW and Incineration technologies. The Trapp feedstock is a relatively heterogeneous coal and MSW/RDF mix, and the IGCC facility is not an incinerator, hence little of the available literature is necessarily applicable.

Largely absent from the list are independent peer reviewed assessments of ICGG produced fritted slag from mixed coal MSW/RDF feedstocks. There is little in the literature to reassure the public that BG/L ICGG facilities & frit are unfailingly environmentally benign, or that all the heavy metals in the feedstock are effectively sequestered.

The DEIS has not adequately addressed the short & long-term character of the fritted slag. There is some question as to the efficacy of metal sequestration in the

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Comment No. 20 (cont.)

Issue Code: 02

have been identified. According to the *Cumulative Assessment of the Environmental Impacts Caused by Kentucky Electric Generating Units* prepared by the Kentucky Natural Resources and Environmental Protection Cabinet, further electric generation capacity often facilitates the development of the area economy.

Comment No. 21

Issue Code: 11

No impacts to the general public's health and safety would be expected from the RDF because the gasification process has no air emissions; only minor amounts of wastewater would be generated from this process. All facility wastewater would be treated and discharged to the Kentucky River in accordance with their KPDES permit. Incremental increases in air emissions from operation of the CTs and cooling tower would be a very small fraction of the relevant federal and state ambient air quality standards (less than 1 percent for gaseous pollutants such as NO_x, SO₂, and CO; and less than 4 percent of the federal 24-hour PM₁₀ standard). There would be no significant short- or long-term air quality impacts and the health risks are expected to be minor.

Heavy metals in the RDF would be sequestered in the vitrified frit, a glassy matrix material created during the gasification process, making the potential of metals leaching from the frit into the soil and water extremely low. The frit from gasifiers operating on a 100 percent coal feed has consistently proven to not leach. Since this project will be using a different feed stream, the first batch of frit should be subjected to TCLP testing to ensure that it does not leach. Heavy metals emissions from the gas turbine operation would be less than 28.3 grams (1 ounce) per year. Total heavy metal deposition in areas downwind of the project would be much less than 1.1 kilogram per hectare (1 pound per acre) accumulated over 20 years. The maximum air pollutant increase associated with emissions from the proposed

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frit. MSW/RDF has a highly variable metal and energy content compared to coal. It is possible that the metal concentrations in the vitreous waste will also be more variable, making the specific character and safety of the 500 ton/day of solid effluent harder to characterize. The DEIS should detail how & by whom the frit will be assessed.

The public cannot measure the risk created by the Trapp facility without additional review and research. In the face of such uncertainty, it is reasonable to require an Occurrence class insurance policy sufficient to remediate potential long term damages. Unless DOE and the EPA bind KPE & EKPC to a new round of permits to review the results of the one year demonstration, or a long term occurrence insurance policy that can cover any damages, the facility should not be funded.

In Conclusion

There are significant flaws and omissions in the Trapp facility DEIS. These demand repair and a new round of public review.

While it is not the Federal Government's job to enforce Kentucky law, the Feds should not facilitate the avoidance of Kentucky law nor reward the good environmental management efforts of Kentucky by dumping New York's trash on us.

The determination that there are no significant environmental or social justice issues is not supported by the facts. Many genuine environmental questions remain about the use of MSW/RDF. It is clear that Kentucky would be better off using 100% coal at Trapp.

It is patently unfair to reward a poor state that has afforded itself a safe means of disposal of its own MSW with almost a volume half again it's own, just to lower the cost in a far more affluent state. It is an injustice to unnecessarily risk the physical and economic health of that poorer state for the sake of experimentation when there are no local benefits.

Kentucky doesn't have a waste disposal problem, so we cannot benefit there. Our costs will inevitably rise to compensate for the demand on our landfill space for the frit and other waste from East Coast waste. Our costs for health care will inevitably rise to repair the damage from heavy metals that could be avoided. The quality and quantity of water available to the second largest city in the state is unnecessarily threatened, risking it's economic growth. Using MSW/RDF denies a long term market for Kentucky coal.

The decision to not consider other sites is not supported: partners already have IGCC facilities to demonstrate the fuel cell component. Failing to include the Lima, Ohio plant is a clear sign of the inadequacy of

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28/13

29/12

30/11

25/07 (cont.)

31/02

33/21

Comment No. 21 (cont.)

Issue Code: 11

project would produce no significant short- or long-term air quality impacts. Air and water emissions from the proposed project would be regulated by the State of Kentucky. The air quality permit for the proposed project requires continuous emission monitoring for criteria pollutants and annual emissions testing for cadmium, lead, mercury, hydrogen chloride, and dioxins/furans. Noncompliance with permitted emission levels would result in a plant shutdown.

Comment No. 22

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Comment noted.

Comment No. 23

Issue Code: 22

The EIS is designed to present all of the potential environmental impacts of the various alternatives relating to the proposed federal action, both beneficial and detrimental. The benefits associated with the project are not intended to be used as justification for the environmental costs. The RDF will be used to generate the syngas fuel. The paper and plastics are retained in the RDF to add heat value to the feed material. The Kentucky Natural Resources and Environmental Protection Cabinet has advised KPE that the RDF is a recovered material, not a waste. The Kentucky Pioneer IGCC Demonstration Project facility will be considered a recovered material processing facility and the gasification process will not require a waste permit as long as the RDF conforms to the statutory definition. An Emergency Response Plan and Spill Prevention, Control, and Countermeasure (SPCC) Plan, which document procedures for providing emergency response and cleanup for any project related spills, including those during materials transport, have not yet been developed by KPE. The plans will be developed during the engineering and construction phase of the project and would adhere to local, state, and federal regulations.

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the DEIS site selection effort. Electricity demand and price are higher anywhere else in the country. Trapp may be one of the worst sites available. Given the long distances from the MSW source material, sites to the north and east deserve consideration.

EKPC should have attended the December DOE/EPA hearing at Trapp. KPE has proven unreliable at acquiring funding. EKPC has interjected a PSC decision into their commitment to DOE. EKPC & KPE relations are visibly suffering. The current partners are not working well with the public or each other. DOE should not use them as the basis to deviate from a full site review.

The Federal Government should not invest in a project at such risk of foundering in a permit fight.

The Federal Government should not invest in a project that cannot acquire timely and reliable private funding.

DOE & EPA need to justify the use of research dollars on a facility that intends to ignore the research outcome.

The DOE CCT program should not divert scarce Federal funds to research that is outside the realm of Clean Coal. Using CCT monies for research on MSW/RDF diverts those dollars from their intended purpose. DOE CCT's mandate is to make coal clean to use, not to remove coal from the energy production cycle.

The Lima, Ohio Global Energy facility undercuts the basis for Federal investment. The goals of DOE & CCT can be met without Federal funding.

The Mason County Spurlock plant now seeking permit from the Kentucky PSC by EKPE addresses the base electrical needs stated in the DEIS without Federal funding.

The lack of design information in the DEIS makes it a dysfunctional document-one cannot estimate the environmental impact of the proposal from what is included in the DEIS.

There is overwhelming evidence that the DEIS needs repair. The document does not detail the environmental impacts of the Trapp facility, nor defend the need for agency action. The DEIS, as presented, is more a dogmatic tract asking for the public's faith than a fact-filled document presenting the environmental impact of the proposed facility. Please mend the document and offer it again for public review.

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Comment No. 23 (cont.)

Issue Code: 22

The 454 to 635 metric tons (500 to 700 tons) per day of frit generated by the facility would be sold as road aggregate and would not be deposited in a landfill. KPE has indicated that they would be willing to work with Kentucky Department for Environmental Protection (KDEP), Division of Water, during low-flow conditions in the Kentucky River and would cease plant operations and water withdrawals if required. All air emissions from the facility would comply with the limits established by the PSD/Title V Air Permit.

Comment No. 24

Issue Code: 06

Comment noted. Readily available information does not allow a mass balance analysis for the partitioning of toxic metals among vitrified frit, air emissions, and wastewater; however, it is expected that almost all of the mercury and other heavy metals contained in the feed stocks would partition out into the frit. Nevertheless, the emission estimates presented in the EIS for heavy metals are based on data from a similar IGCC facility using coal as the feedstock for the gasification facilities. Those emission rates were considered in setting the emission limits specified in the air quality permit for the proposed project. It should be noted that the air quality permit for the project requires annual emissions testing for cadmium, lead, mercury, hydrogen chloride, and dioxins/furans.

Comment No. 25

Issue Code: 07

The process diagram included as Figure 3.1.1-1 in the EIS was not intended to be a detailed construction drawing, but to represent a general depiction of the overall process. KPE states that the specific details of the nature and degree of aqueous effluent cannot be identified until the plant design is in more advanced stages. Prior to treatment, this waste stream may include pollutants such as metals, tars, and oils. However, as stated in Section 5.8, Water Resources and Water Quality, treated wastewater is expected to contain conventional pollutants such as nitrogen, phosphorus, total dissolved solids, and biological and chemical oxygen demand. Pollutant discharge

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Appendix A-IGCC Frit & MSW Title Search Results

The Dialog ® search terms used here are : LURGI OR BG/L
OR IGCC OR INTEGRATED()GASIFICATION OR FRIT OR
SLAG) (S) (MSW OR GARBAGE OR RDF OR REFUSE)

As is evident from the titles below, nearly all the
available literature is on MSW and Incineration
technologies. The Trapp feedstock is a relatively
heterogeneous coal & MSW/RDF mix.

As DOE's partner, KPE, has repeatedly informed us, the
IGCC facility is not an incinerator, and RDF mixed with
coal is not MSW, hence little of the available literature
is necessarily applicable.

While a case by case review seems neccessary to determine
whether the available publications are germane and their
impact on the goals of the DEIS, what is largely absent
is independent peer reviewed assessments of ICGG produced
fritted slag from mixed coal MSW/RDF feedstocks. There
is little in the literature to reassure the public that
BG/L IGCC frit is unfailingly environmentally benign and
that all the heavy metals in the feedstock are
effectively sequestered there.

The first citation below is not part of the Dialog
search.

Bibliography

5. "Destruction of Toxic Organic Substances in a Slagging Gasifier Including
Determination of Heavy Metals in the Slag" Distefano, R. P., Iberle, D.J. et al.,
Columbia University Account Number 3-26270, Final Report for U.S. EPA Office of
Research and Development July 15, 1983.

2/6/1 (Item 1 from file: 10)
Application of refuse slag in concrete for agriculture (Cinders). 18092
Onderzoek naar de toepassing van afvalverbrandingslakken-beton
1980
AGRICOLA 70-2001/Dec (c) format only 2001 The Dialog Corporation

2/6/2 (Item 2 from file: 10)
472238 739228213
Einfluss steigender Gaben an Müllschlacke auf die Ertragsbildung und den
Gehalt an Spurenelementen im Weizen; Influence of increasing amounts of
refuse slag on yield of wheat and its content of trace elements
1973
AGRICOLA 70-2001/Dec (c) format only 2001 The Dialog Corporation

2/6/3 (Item 3 from file: 10)
423120 739188394
Die Verwertung von Müllschlacke für landwirtschaftliche Zwecke; Use of
garbage slag for agricultural purposes (Fertilizing)
1972
AGRICOLA 70-2001/Dec (c) format only 2001 The Dialog Corporation

2/6/4 (Item 1 from file: 5)
09173740 BIOSIS NO.: 199497182110
PCDW/PCDP formation and destruction during co-firing of coal and RDF in a
slag forming combustor.
1994
BIOSIS Previews (R) 1969-2001/DEC W4 (c) 2001 BIOSIS

2/6/5 (Item 2 from file: 5)
08124468 BIOSIS NO.: 000042105091
FIXATION OF RESIDUES FROM SPECIAL HAZARDOUS WASTE INCINERATORS FOR SHALLOW
LAND DISPOSAL
1992
BIOSIS Previews (R) 1969-2001/DEC W4 (c) 2001 BIOSIS

2/6/7 (Item 2 from file: 30)

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Comment No. 25 (cont.)

Issue Code: 07

limitations would be set by the Kentucky Natural Resources and
Environmental Protection Cabinet, Division of Water's Water
Resources Branch and would be identified in the KPDES permit.
These limitations would be established based on site-specific
computer modeling of the expected effect on water quality of the
Kentucky River at the proposed discharge point and in the mixing
zone immediately downgradient. The limits specified in the permit
would protect existing water quality.

The Water Resources Branch pays particular attention to the proximity
of wastewater discharges to drinking water intakes. New sources of
wastewater are prohibited within 8 kilometers (5 miles) of a water
treatment plant intake. This 8-kilometer (5-mile) limit was established
to provide an additional layer of protection for the water quality found
at drinking water intakes over treatment alone and is referred to as
Zone 1. Zone 2 extends from 8 to 16 kilometers (5 to 10 miles), while
Zone 3 is the area from 16 to 40 kilometers (10 to 25 miles) from a
water treatment plant intake. The proposed outfall is located in Zone
3 for the Winchester Water Treatment Plant. Water collected at the
treatment plant is tested and treated to meet all federal and state
requirements concerning drinking water quality. Therefore, no
impacts to drinking water are expected.

All materials transported on land would be enclosed in vehicles and
would not be released to the environment under normal circumstances.
In the event of an accident, some materials could be released to the
environment. KPE would develop an Emergency Response Plan and
an SPCC Plan during the project engineering and construction phase.
These plans would detail KPE's planned response and clean-up
methods for any spills or emergencies that occur on the J.K. Smith
Site. In addition, the Kentucky Division of Water's Emergency
Response Team should be called ([502] 564-2380 or 1-800-928-2380)
in the event of an "environmental emergency." The spill or